

Wrangel Island (Russia) Snow Geese wintering on the Fraser and Skagit River deltas: population dynamics and interaction with Scirpus marshes.

Sean Boyd, Canadian Wildlife Service, Environment Canada*

Keywords: Snow Geese, Fraser River delta, Skagit River delta, Management, Population, Scirpus marshes

The Lesser Snow Geese (*Anser c. caerulescens*) nesting on Wrangel Island overwinter in two distinct areas of North America: the Fraser River (B.C.) and Skagit River (WA) deltas (northern area) and the central valley of California (southern area). The northern area supports a largely closed population from December to April. Since the early 1970s, the proportion of Wrangel geese wintering in the northern area has increased at a rate of about 1% per year (and, conversely, declined at the same rate in California). At this rate, the Fraser and Skagit River deltas may end up supporting most of or perhaps the entire Wrangel population at some point. The Canadian Wildlife Service (Environment Canada), in concert with the Washington State Fish and Wildlife Dept., developed an aerial photo protocol to estimate Snow Goose abundance and young/adult ratios on the Fraser and Skagit River deltas. In addition, mail-out surveys were conducted to estimate harvest. The size of the Fraser/Skagit population fluctuates considerably across years due mostly to breeding ground successes or failures. However, whenever recruitment exceeds harvest, the number of adults (white birds) counted the next year increases by the same amount. Because the northern wintering population is largely a closed one and the air-photo counts are accurate, a simple model can be constructed to estimate survival rates and the effects of recruitment and harvest on population size and growth rates. These are essential components in the management of this internationally important population of Arctic geese.

As the Snow Goose population increases on the deltas, it is important to know how their traditional food resource, the foreshore Scirpus marshes, may be affected. Stem density measurements conducted between 1988 and the present suggest that the interaction between the geese and marsh is already at or approaching a low-level, steady-state equilibrium.